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Data Management in Modern Organization: the Aspect of Project Designing

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Project – a new form of modern organization management, that allows to distribute effectively the reserve forces of the organization and to use the potential is analysed in the article. Successful organization is planning the projects that closely relates with information[1] management understood as project management. The processes of the project organization can be arranged in five groups: initiative processes, planning processes, control processes, accomplishing processes. Project is always influenced by surroundings – the group that is performing the project should understand this endless context while identifying the members of the project, organization influences, and common management skills. Modern technologies allow using huge amount of information, and the use of it in organization activity becomes increasingly valuable. Very important is not only the information novelty, but also the correct usage of it. When the work is performed in complex and in so quickly changing surroundings it is natural to solve the tasks and act using limited information that is why to get the complete amount of information is a problem. The organizations that perform in different business spheres and feel the competition, establish information services, and the effectiveness of the whole organization work depends on the effectiveness of these services. The task of such services is to collect information, systemise and analyse it. Information Management (IM) designing is understood as universal management inventory. The models of it can be designed for business and production management, commerce, politics, culture, science and even the information activity itself. The concept of the information management is one of the current questions, that is in influenced by the novelty of the activity in this sphere, very quick theoretical and methodological change and integration into new problematic spheres. A successful organization should plan their activity including projects and information management. While making a project of information management there appears an activity that is understood as information management (IM) project management (IMPM). Many organizations have their own culture that shows inner value system, norms, believes that show peculiarities of the activity, communication with inferiors and other factors. Very often organization culture influences projects. General management skills influence project management skills. Information management designing – is a multi-sided and quickly changing activity. Project should start from initiative process (from logical designing), concept and purpose should be thought over too. Modern organizations must change traditional management into contemporary organization modes – projects, which will create terms for information management project, wishing to introduce a new understanding of management, which will allow to solve many problems that can be hardly explained by modern management. The integration of systems in modern organization is relative, because the relations between activities are changing and different systems are made in different periods of time. That is why according to the view of information managementthere exists the link between different systems that will control the transfer and receiving of the the information that needs to be connected and unified.

That is why the link between different systems is needed to connect information streams that will provide the unified transfer and receiving of information.

Keywords: *information management, designing processes, information management designing, the steps of information systems designing.*

Introduction

All the functions of management-planning, organization, management and control are supported by the information stream that provides the information about the facts that are taking place in organization and out of its borders (Stoner, Freeman, Gilbert, 2001). Business managemest essence consists of goods, money and information streams, their control that is necessary for business development in market conditions (Brazaitis, Brazaitienė, 1998). Modern market economy dictates new conditions in service and trade sectors. At the end of the millenium the development of technolgy influenced the development of economy. Modern technologies allow to use huge information amounts, the use of which in management sphere becomes more and more important (Stankevičienė,

[1] *Information* [lat. information – message, report] scientific, society, political, technical knowledge is transferred from one person to another orally, in written form or with the help of the mass media resource (newspapers, radio, television, cinema, computer nets); the data, the entity of the knowledge about a certain topic; company's sector, that provides and explains the knowledge.

2004). According to Garlėja, Skvorcova, 2002 the social status of a person depends on regular information streams. Information connections with outer world create opportunities for people's activities – especially socially important information. In this case the quality, quantity and content of the information is important. Shortage of information can lead to person's abnormal develpment and phychological changes. So called "information hunger" is felt in certain circumstances and it can be dangerous for person's development

Informations is one of the important corporation back-up. In the last thirty years the information quantity was growing (Zeleny, 2000), and because of the technology development it became possible to receive the information from different sources and very quickly (Hicks, 1990). According to Herms (2004), information became a modern capital. Augustinaitis and Macevičiūtė (1996) state that quick information technology chnage and development influence the individual and cooperative work, creates new information needs and attitude of consumers, changes the organization culture.

Information is the important reserve of the corporation, that can evoke the similarity of the concurrence. But this reserve should be managed in a good way. The growing amounts of information streams are interpreted with the help of information technologies. There is no any modern corporation that can perform without information technologies. Companies need a lot of outer information, but at the same time they themselves possess information, constantly produce and renew it. In this case the novelty of the information and the usage of it are very important. According to Augustinaitis (1996), management is understood as universal management inventory. The models of it can be designed for business and production management, commerce, politics, culture, science and even the information activity itself.

Augustinaitis (1996) states that corresponding to information management any social organization first of all means people's relations. Things, organisational structures, physical placement in space and time, the usage of technology, art, innovations and the management itself are only the expression of people's relations. And these relations have a certain communicative expression. That is what information management always expresses the relations people's in organization process. It includes not only formal management of the positions as it is accepted in classical management, but also includes a huge layer of non-formal connections the organisation of which influences formal management content. According to Augustinaitis (1996), information management cannot be distracted from the communication development and accepts it as a basement. Information management is orientated into information and its management. Any information implies the relation between information and technology.

Information management designing concept is one of the current questions, that are influenced by these spheres: 1) novelty, 2) very quick theoretical and metodological change; 3) integration into new problematic spheres.

The **main goal of this research** is to study the designing of modern information organization management aspects.

The object of the research – designing of modern organization management.

In order to reach the goals the following **aims** were held:

1. To study the process of information management designing.
2. To analyse the surrounding of management project that means to find the parts it consists of.
3. To state the sequence of information management design.
4. To find out the main information aspects of information design system in modern organization.

To fullfil the aims of the research the following research methods were used: theoretical analysis of the bibliogrhaphy and the comparative analysis of independent sources.

The process of management of Information management (IM) project

According to Augustinaitis (2000), all the spheres of society are changing so quickly that many of them are considered to be revoliutionary: information, technologies, digital, media, management etc.

What is information? According to Augustinaitis (1995) to answer this question is very difficult. The time test passed only C. Shannon's theory of information quantity. But this is a classical example already. This theory performs faultlessly if we don't look at semantic abd quality aspects. But at the same time they are the ones that explain the ideal content of information specifics. In the first case information is "preserved" in bites amount and becomes amorphous material product, that can be compared to raw material, mineral, energy and natural resources.

The information question is highly developed in cybernetics and statistics (Augustinaitis, 1995).

Historically information management is connected to specialized information activity spheres – library creating, bibliography, achives. On the basis of these spheres the problems of new documentation were formed, they were connected to new information processing methods and their application in industry. In the middle of the 20th century the understanding of information is connected with technology and electronic data processing and the information activity acquired the status of different systems and was supported by counting center concept (Augustinaitis, 1995). According to Augustinaitis and Maceviciute (1996) information management includes non-informational activity, informational resources, their processing and communication. Information management is described as an application of management principles for society or organization information processes. This is a flexible strategy that can be applied on different levels (personal, corporation, society information) and activity spheres for information management. Studying the information management from the process point of view the following stages can be described: finding out organization's needs of information and information receiving, information processing and organization, information announcement, usage and storage (Manžuch, 2004).

According to Alter (1995), Biethahn, Muksch, Ruf

(1990-1991), Reinermann (1987) and others, information management becomes inventory that allows to integrate material, human, technological, organizational, cultural factors, artistic processes, innovations and the usuage of this conmplex for incresing the organization effectiveness and strenghening strategic positions.

In business sphere when there is a high level of risk and uncertain circumstances it is necessary to create an effective strategy. How should corporations reorganize their strategy so that it became profitable. Beinhocker, Kaplan (2002) state that an effective strategic analysis is necessary for leaders that are thinking about the property they have and the development of the reserves, the usage of the possibilities and the formulation of strategic aims. Shaker, Neubaum, El-Hagrassey (2002) state that a successful strategy depends on the level of understanding of the leaders of informational agenda, their understanding of difficulties and possibilities, economy – that all makes a basis for better decisions to make. Projects are the activity of peoples that needs to be planned, coordinated and controlled. That's why project management is important as it is an inventory of knowledge, skills and methods usage, that helps to fullfil the wishes of projects performers and customers. Manager has to balance between: time, cost sheets and quality, different opinions and requirements of project partners; identified requirements (needs) and undentified requirements (wishes).

Designing the project management there appears an activity that can be understood as

Information management project management. This phrase gives sence for desinging information management (Duncan, 1996).

The processes of information management design are given in Figure 1.

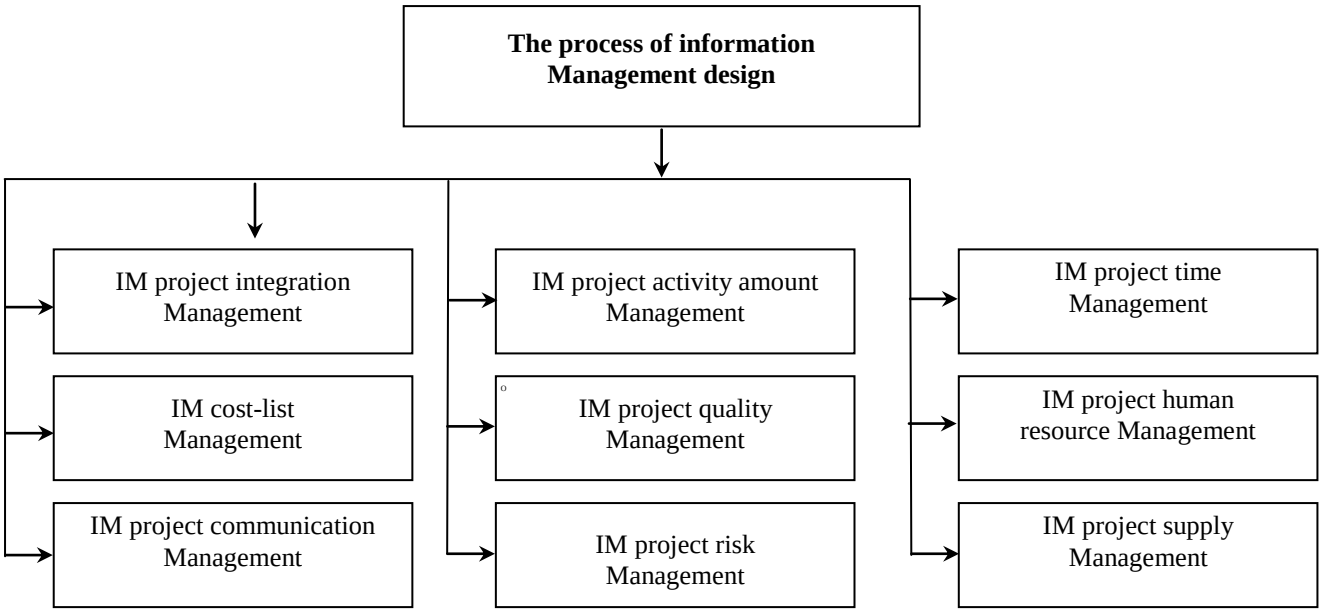

Figure 1. Information Management process design *by: Duncan, W. R., 1996.*

Projects consist of processes that make a sequence of activities that guarantee a certain result. The processes are manged by people and can be divided into two main parts (Laudon, Laudon, 1996).

In case of information management design it would be: IM project management processes that are connected with design organization and describing; processes that are made for IM project product – information management usage. The cycle of project functioning describes these processes.

Both groups of this process are connected (for example it is impossible to state work ammount without the understanding of product producing)

IM management processes can be grouped into five groups (Laudon, Laudon, 1996):

1. *Initiative processes* – projects and their basis acknowledgement. It is a moment when the necessity of project is clear and there are no barriers for project functioning.
2. *Planning processes* – creating and acknoledging of the schemes that are necessary to perform the goals of the project.

A successful IM designing must forsee the effective planning scheme. From the systematic point of veiw the management must guarantee the effective usage of the resourses. The main planning processes that can be met in all projects consist of: quantity planning-project direction and ammount estimation; the definition of the project size – project applicability; definition of the activities-specific activities, that are necessary for the designing, identification; activity sequence planning-activity dependance identification and stating; the estimation of the activity lengh – the time that is needed to perform each activity; resourse planning – the resourse that is necessary to perform the activities of the project (people, equipment, raw materials) and the quntity ammount estimation, cost-list evaluation – the divison of cost-lists for every activity; project plan creating – the fixsation of the process results. Process division and and fixation. The applicability of the processes and parts are given in Table 1.

Table 1

Processes of information management managing

Adapted according to : Duncan W. R., 1996; p. 6-8.

No	The aim of the process	The purpose of the process	The components of the process
1.	Integration management	Provides suitable coordination of all project elements.	Creating project plans Project plans fullfilment Thourough change control
2.	Activity ammount management	Promise that the project will include all the work that is necessary for successful fullfillment of the the project.	Project initiation Size planning, Size estimation, Size cheking Contol of size changes.
3.	Time management	Guarantees the project fullfillmrnt according to the schedule.	Activity statement Sequence of activities The lengh of activity sequence Making a schedule Schefule contral
4.	Cost-list management	Guarantees that the project will be performed without exceeding the budget.	Resourse planning Cost-list estimation Budget division The expences control
5.	Quality management	Guarantees that the project will meet all the requirements.	Quality planning Quality quarantee The control of the quality
6.	Human resource management	Guarantees the effective usage of people taking part in the project	Organisational planning, personnel checking, team building
7.	Communication management	Guarantees the neceaasry generation of the information, collecting, division and storage.	Communication planning Information divisionin Work reports
8.	Risk management	Is connected to project risk identification, analysis andresponsibility.	Risk identification Risk estimation Risk reduction The contro of risk changes
9.	Supply management	Guarantess goods and services supply from the organization surroundings	Supply planning Order planning, Order formation The choice of sourcesš The fullfillment of agreements To stop contracts.

3. *Executing processes* – coordination of people and other resources according to the plan: project size check – the direction of the project fulfilment is checked; quality guarantee – all designing fulfilment evaluation based on rules and norms, that prove that the work will be done according to the standards; team building – the process of acquiring an individual and group skills in order to improver the project fulfilment; information division – the supply of the information that is necessary for people taking part in the project in time; order formation – the knowledge of price, rate, offers – the choice of the suppliers, the fulfilment of the agreement – relation with suppliers management (Laudon, Laudon, 1996; p. 28).

The professionals from different spheres understand modern project activity very differently (Melnikaitė, Bartkus, Skučas, 2003). All projects meet the problem of work organisation among different people and groups. In case if the project management is not thought over in details the project becomes chaotic, the effectiveness is decreased (The main principles of project work organisation) [43].

4. *Common change control* – the control of the changes that can occur during the whole period of project organisation; Size change control – the control of the change of project size; schedule control – the control of the schedule change; expense control – the control of the project budget changes; quality control – the control of project procedures, the check of the results that is based on requirements and standards and, if necessary finding the ways how to take away the reasons that prevent from reaching the necessary quality level; work reports – the report of activity state, date change, forecast collecting, risk changes control – the fixation of the risk that can occur in organisation.

The objectivity of project monitoring is dependent on organised change control, that allows to react to the problems in time (Main principles of project work organisation) [43].

5. *Accomplishment processes* – projects or their part emphasis: the end of performance – formal information announcement about the project accomplishment; the end of agreement fulfilment.

These groups are connected with common results – the results of one group are raw material for another group processes. According to project management, it is possible to state that management processes very often overlap with each other (Laudon, Laudon, 1996).

Project information management surroundings

According to Langston, Lauge-Kristensen (2002), the understanding of the surrounding in which organization is acting, the intensity of the concurrence helps to effectively divide the resources and offers, a better usage of possibilities. Business – is a concurrence-based activity focussed on the client that is performed in constantly changing surroundings. Surroundings influence the performance of projects that is why the team that is in charge of the project should understand and evaluate the endless context of it. And if they want to orientate themselves in it, it is necessary to identify: project participants, organizational influence and general management skills. Project participants are people and organizations that are actively involved into a project, or whose interests can positively or negatively influence the performance of the project or its results (Laudon, Laudon, 1996). The design team should identify the members of the project, to find out the needs and wishes and keeping them in mind guarantee that the project will be fulfilled. Very often, it is difficult to identify all the project participants (for example an employee whose future will depend on a newly formed management group is an interested party of the project).

The main participants of the project are – project manager – a person who is in charge of project management; customer – organization or person who will use the product of the project – in this case a new information system; responsible party – organization the employees of which are involved in designing; supporter – a person or a group that provides financial support for project performance.

There are more project participants and interested parts categories of the project: inner and outer, owners and founders, suppliers and partners, team members and their families, state institutions and information means, citizens, constant or permanent pressure organizations and society in general. While identifying the intersted parties, it is necessary to find out who identifies himself as an intersted party of the project (Duncan, 1996).

Person's brains possibility to process and accept the information is unfortunately limited. Consumers use the information very selectively, they receive saving the so called "mental energy" (Solomon, 2004). Very often the aims of the project participants contradict and that leads to conflicts (for example the department leader that orderes information system is interested in dimisnihsing of cost-lists, the system producer in the creative process accentuates the efficiency of tewchnology and the equipment supplier is interested in profit maximum). But very often the results of such discussions are very useful for the consumer.

Projects are usually performed by big organizations – corporations, state institutions, professional associations, international organizations. Evenin case when the project group consists of a separate organization, designing is influenced by the main organization (Kerzner, 2003).

From the designing point of view it is possible to point out two organizational systems (Kerzner, 2003; Duncan, 1996).

Project-based organization, that consists of projects. All the profit of such organizations is the sum of the performed projects's profit. According to Kerzner (2003) and Duncan (1996), project-based organizations are divided into: organizations whose main profit source is received from performing the projects that are ordered by others (architecture companies, design organizations, consultants); organizations that use designing in their activity.

Non-project-based- production companies, financial firms, that very rarely have management systems that can effectively support project needs. In such organisations the biggest part of the resource belongs to production, not to the projects. Such organizations have representatives that perform as designing groups.It is very difficult to perform a project in a non–project-based organization, because the personnel and leaders do not have designing skills and professionals are not hired; projects are delayed very otften, and their performance is complicated because of the vertical management chain; projects are performed only in the local departments and only a small part of the employees can get acquainted with it and the work of the system (Duncan, 1996). The prject group must understand the influence of the system to project.

Very often the resources that are given to the performance of the project influence the structures of the organizations that take part in the project. The structure of management is the way or division, organization and coordination to provide stability and help the members of organization to work and achieve the goals. There are three formal types of organizational structure: functional organization, product/market organization and matrix organization (Stoner, Freeman, Gilbert, 2001). It is possible to point out several organizational structures. Classical organizational structure is a hierarchy where every worker has a clear leader (Duncan, 1996). The main point of functional structure is work groupping according to special criteria. For example, the activity of the organization can be divided among ficnances, marketing, personnel and other departments (Tietar, 2003). According to Duncan (1996), even if the projects are performed in functional organizations the effectiveness of them is limited because every department performs the work independently.

The project organization structure is different. In such organization the majority of the resources is given to project work, project managers have wide possibilities for independence and functions.

Matrix organizations are the combination of functional and project organizations. Weaker matrix belongs to functional organization characteristics, project manager performs as coordinator, and not as a manager. Stronger matrix belongs to project organizations: constant project managers and constant project management personnel.

The majority of modern companies build their activity as a complex of the qualities from all structures. In this case even functional organizations can create special project teams, that have project based organization qualities: they can have constant personnel gathered from different departments.

The majority of organizations have their own culture, that reflects inner system of values, norms, believes, activity nuances, view into subbordiantion links and other factors (Augustinaitis, 1996; Duncan, 1996). Organization culture can influence the project directly. For example, a group that offers a risky and unusual project will be more valued as aggressive to the surrounding organization and will be misunderstood in bureaucratic organization; the team work orientated manager will have problems in hierachy organization, and the manager with authoritarian position will not be accepted in cooperating team. Lukauskaitė (2000), studying the most effective ways of achieving common goals underlines that common attitude of the leader while managening the team is the key point. It is necessary to point out that the leader should create the atmosphere of sincerity at work, to strengthen the trust of team members in eachother, to underline the constant help, share the information. Leading style is an entity relation between the leader and subbordinates. A very different knowledge is required from leaders, the ability to evaluate the situation, to see the perspective for development and what is the most important to be able to persuade the subbordinates that the goals are real and effective, that means to be their leader (Seilius, 1998). It is very important for the leader to have an authority that can be acquired with choosing the correct communication style. Kalinauskas (1999), has pointed out traditional and modern leader qualities and differences. General management skills are project management basis. These skills are very often necessary for IM project team work. General management covers all the aspects of organization management. Mangement includes finances and accountancy, sales and marketing, reserches and development, production and supply, strategical planning, tactical planning, operational planning; organizational structures, organizational behaviour, personnel management, work relation building, based on motivation, delegation, overlooking, team building, conflict management and other methods; time, stress management and other methods.

According to De Feo and Janssen (2001), everything must have entity and be closely connected: research and development, production and human resources, finances, marketing, quality, service – all these spheres must be integrated in relation with the company's vision, mission and main strategies.

To fullfil a prject in certain time and cost-list borders is very difficult in case there is not enough of attention given to it. IM designing is quickly changing variable activity. It consists of different meetings, report writings, conflict solving, constant planning, communication with customers and crisis mangement. In such activity it is very important for project manager to use his time effectively.

Information management project cycle

Projects can be characterized by novelties, that is why they lack certainty. Organzations that perform them very often divide them into designing phases, for the better management control and more effective link with organizational operations. The project phase very often coincides with the fullfilment of different activity or product stage designing process. All the phases together make a cycle of project exsistence.

Project exsistence cycle states the beginning and the end of the project. The cycle also states (Duncan, 1996): what work and in which phase it should be performed who must take part in performance in a certain phase.

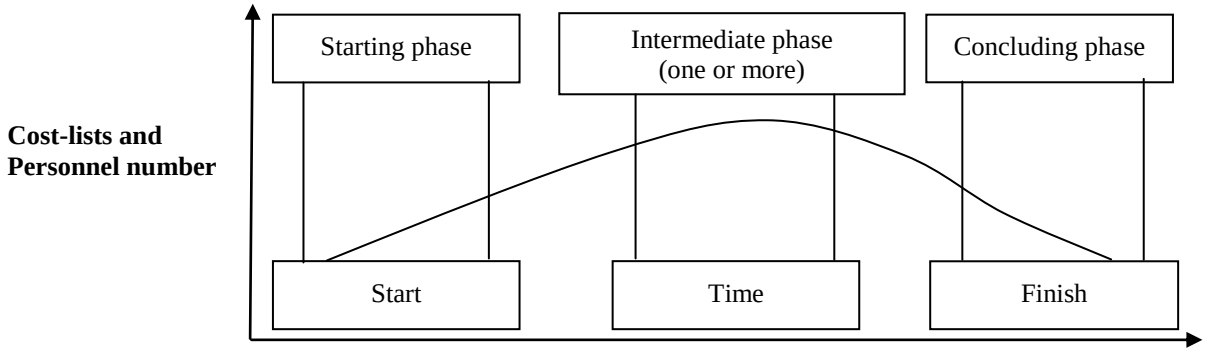

Figure 2. Information management project cycle *by: Duncan, W. R., 1996.*

Information management project cycle description can be general or detalized, to have plenty forms, tables and questionnaires that show the structure and thoroughness. A lot of project existence plans descriptions have a lot in common (Duncan, 1996): cost-lists and personnel number are not big at the beginning of the project, they increase and decrease at the end of the project (pic 2); at the starting point of the project there is less certainty that the project will be succsessfully fulfilled and the risk of collapse is bigger.

In the process of design the success probability is growing; the possibility to influence the qualities of the project product and the final project price is bigger at the beginning of the project and decreasing when the designing process is taking place. The further the process goes the less funding is needed for correcting the mistakes and organising changes.

In order to avoid the mistakes and the expences that follow it is necessary to have an inner communication. Simanauskas (1996) underlines the meaning of informa-

tion completeness and timeliness. According to the author the necessity of managemt processes, the effectiveness of realiztion very often depend on the information that was received in time. The fact that there was enough time to get the full ammount of it makes it possible to take a decision.

IM project cycle consists of four circles: primary construction circle raises the requirements for the system, plans certain goals for the primary construction, makes a logic IM system planning and primary construction, performs the tests, evaluates and gives recommendations; secondary construction circle raises the requirements for subsystem, plans the goals for the secondary construction and performs physical IM system planning and secondary construction, makes the tests of the system, evaluates and gives recommendations; closing circle raises global requirements, performs closing planning, fullfills all the aims that were put for the system and subsystem; the circle of concept check describes the requirements that are raised for the system, foresees the aims of that phase, performs the risk analysis and gives recommendations.

According to Stoskus (2002), the quality and quantity, time and value functions are checked while performing the control function.

From the point of information management, in this phase the problems and aspects that require a new management concept are held. With the help of the primary construction phase the main rules of management are created, they state the organization of management and the succession of this process, the logic management schemes are created, the activity principles are stated. Secondary stage – is the stage of logic interpretation projecting on the physical level: information resource, communication channels and planning of the information processing mangement.

The closing phase of the project is the connection of communication channels and information processing into one informational system and its testing.

Projecting of Information System (IS)

It is often said that company has some or other information system. But that system consists of many other smaller systems and subsystems, that are used by workers on different levels. There is a difference between functions and applicabilities of these systems. Paliulis, Chlivickas, Pabedinskaitė (2004) think that it is not enough for a company to use only one information system as it does not satisfy all requirements that are held for the information. That is why one of the ways to solve the problem is to classify the information systems of the company according to their organizational levels and the types of the decisions taken. The majority of the earlier authors name the main three levels of organization: operational, tactic and strategy levels. Paliulis, Chlivickas, Pabedinskaitė (2004) state that a tactic level consists of two levels – knowledge and management. In the article [23] *Learning Management and Knowledge Management* is stated that that knowledge management is very important for strategy or tactics levels of organization. It is not enough for the company only to process the data. It has to evaluate the information in a wider context, to compare its activity with other companies and trying to follow the latest achievements and tendencies in science sphere. The more knowledge they acquire the better decisions are made.

According to Wysocki, DeMichiell (1997) ir Zeleny (2000), information systems should be groupped according to the functions they perform. It is possible to point out two main type of these systems – these are systems that are used for data and inforamation processing, to present the results using different models of analyses, ways of presentation and other systems that are used for collecting of knowledge and its usage in different systems, in orfer to get better processed results. All the information processing systems are used for management support. Zeleny (2000) states that such systems that are connected with personal computers are called computerized management support systems.

Producers information systems are orientated into the main organizational levels and the types of the decisions that are taken. That is why when a company chooses an information system, it is necessary to pay attention to the usage of system. The information structure is not finished in the company area. It includes not only a company, but also its surroundings (Stonkutė, 2004).

All informational systems are used for taking some or other decisions. It is possible to classify the information systems that are used for taking decisions according to the way of how the decisions are taken on different levels of the organization. In other words the system of decision making is diffent and is supported by different data and information. Companies are very different, that is why it is very important to find out what is the difference between the decision making systems, who are the decision makers, what is the basis that is taking into consideration decision making, what is the way of decision making and what are the dominating ways of decision making, how much time is needed for the analysis (Wysocki, DeMichiell, 1997).

Different companies, information systems are used for getting the answers to the questions. Very often the consumers are not very interested how the system is functioning, it is important to get the answer or decision. Before creating a system it is necessary to imagine the task from different points of view: the consumer's wish is to have a profit from IS in his activity; from the part of analyst who can transfer the wishes of the consumer into the the system's plan; from the establisher's point of view, who according to the analyst's plan can make a system from its separate parts; projects manager's point of view, who has patience to coordinate all the processes (Laudon, Laudon, 1996). Trying to achieve a high project result it is very important to combine all the views. For example the consumer should clearly understand his role in the work of system analyst. Enthusiasm is needed for both the analyst and the consumer to share the ideas and correct the project plan if necessary. In order to avoid the plan fulfillment problems, the analyst must conciliate with the establishers of the system.

IS can be divided according to the organization functions as sales and marketing, production, finances, accountancy and human resourses (Laudon, Laudon, 1996).

Table 2

The main information sytems of organization

System type	Sales and marketing	Production	Finances	Accountancy	Human resources
Strategy level systems					
Management support system (MSS)	The statement of sales tendencies for 5 years.	Operation plan for 5 years	A budget forecast for 5 years	The planning of the profit	Personnel planning
Management level systems					
Management information systems	Sales management	Inventory control	Management of annual budget	Analysis of capital investment	Retraining analysis
Decision support system (DSS)	Region sales analysis	Product classifying	Cost- lists analysis	Price and profit analysis	Work personnel price analysis
Knowledge level systems					
Knowledge systems (KS)	Work construction stations		Graphical work stations		Management work stations
Bureau automatization systems	The sorting of documents		Copy storage		Electronic calendars
Operational level systems					
Routine processes system (RPS)	Order viewing and processing	Machinery control, creating of the production process timetable	Security paper trade. Money operations management	Generating of bills and salary sheets	Training and development. Generating of personnel files and storage.

A typical organization has operational level systems (OLS), knowledge level systems (KLS), management systems (MS) or strategy level systems (SLS) for every function of organization. But different aims of different organizations require different systems.

Companies need to create their own information system (IS). It is clear that this system will be created with the helf of informational technologies. According to Augustinaitis, Macevičiūte (1996), the expansive development of information technologies becomes a must in modern life.

In the modern news society an advanced technology allows to use huge amounts of information, the usage of which becomes more valuable in both organizational and individual activity. And it is very important that not only the value of information is taken into consideration, but also the correct usage of it (Stankevičienė, Merkys, 2004).

Information and information technologies can perform symbolic and signal functions (Stonkutė, 2004). The author states that the supporters of the statement that information can perform a signal function have created difficult computer inventories that can help to make a decision.

Everything that is taking place in organization and out of its borders must be included in its information system. A company is a unity and there are no separate parts that are not informed about the activities that are performed by other parts of it. The streams of information are free to flow that is why the exchange of information is easily performed.

On every organizational level the information is presented in different forms. The leaders of the strategic level receive more processed and analysed information. The leaders of tactic level receive less processed information and the leaders of operational level receive the data information after primary processing. That is why information system connects all the levels of the company and divides the information in the way that allows to analyse and evaluate it in the best way. But it is impossible to create a common information system for all companies is impossible ad every company has its own needs. It is possible to make a common basis that will be suitable for all companies, for example, the evaluation of sales data colecting and analysis, the evaluation of the procution effciency etc. The information system of the compnay that collects the data, proccesses and keeps it, gives results and makes the processes in the company to go quicker. Information systems appeared not so long ago. The first computer based systems came into usage in 1960-ies. But during that period of time information technologies were developing very quickly and together with them the information systems of the companies were developing too. An electronic data processing method is a very quick way to control the information. Such data processing system can satisfy all company's needs, that means the information about company's production weekly accounts, monthtly financial accounts, inventory bills payments. The whole informational system of the company must be called management information system (MIS). Because of the irregular development of different spheres, different way of thinking the attitude to modern

technologies and their possibilities is not the same (Melnikaitė, Bartkus, Skučas, 2003). To create a system that can satisfy the needs of customer is a very difficult task. IS projects can be characterized by the fact that for the creation and establishment more money than it was planned is spent and that work is never fulfilled in time. Even if the system is completed it turns out that it cannot perform everything that was planned, and the manager work becomes even more difficult than before the establishment of the system. But nevertheless IS are created and established (Vytautas Magnus Universitety, Unix laboratory. Information systems) [17].

Chaffey and Harlow (2005), who were analysing information systems state that information systems are the systems that combine companies and people, use information technologies, collect, process, keep, use and spead the information.

The main stages of information systems projecting

The initiation of system projecting. System projecting should not be started before there is left uncertainty about the use of the system and its aim. On the stage of intiation a report about an expected profit, price, time and resource potentials should be explained. Work amount should be planned on this level as well. The plans that are made beforehand allow to choose necessary technologies and programme inventory and teach people (Edwards, Bytheway, 1995).

The analysis of the project. At this stage it is necessary to identify the needs of the custmers, problems that can occur, problems, the wishes of consumers should be detalizd even more than it was done at the initiation stage. The product of this stage is a plan of the suitable test, for testing the applicbilty of the system (Edwards, Bytheway, 1995).

Technical design. This stage is in charge of the connection of different technological solutions. Very often that is the choice of computer inventory and programme inventory. Nowdays there are no company leaders who analyse the data according to the so called manual method. Such analysis is impossible for a human being. That is why computers perfectly help to manage this process. The aim of this stage is to create a testing plan and make documentation for usage instructions (Edwards, Bytheway, 1995). Technical design creates a link between a customer and informational technology. It combines activity and technical solutions, taking into consideration physical aspect that proves the reality of the system, its security and necessary characteristics.

The tasks of system construction – to deliver the modules of earlier approved programmes for integrated testing. Integration test is necessary to approve that there are no technical mistakes and modules connectivity.

Applicability test. A very important role is given to the opinion of the consumer (for example: is the system convenient for using, are there enough system characteristics?). It is also necessary to remember that during the long time of system creating the activity of the consumer can change.

Commitment of the system – at this stage it is important to integrate a system into the activity of the consumer. It is important to understand that a well-informed consumer can effectively use the possibilities of the system (Edwards, Bytheway, 1995).

Integration of information systems and the entity of information management processes

In practice there appears a problem of connecting all systems into an entity. To create a unified system is very diffcult as the relations between activities are constantly changing, different systems are created in different periods of time. That is why an information stream should be a common denominator for all. The system that coincide should promise a unified transfer and reception of the information. The connection of the systems is possible according to the following principle: multiplicators transfer the same information on all communication channels, and the multiplexer, after getting the information, transfers it to the necessary positions according to the stated rules.

The data of the position activity is transferred through multiplexers and gets back into systems, that are exchanging the information after the processing (Edwards, Bytheway, 1995). Information resources differ by their quality and factors. (Gaile-Sarkane, 2005). The author states that the growth of the market will increase the information streams. It is important to connect IM processes and IM estblishment processes into a logical unity. Information mangement project existence cycle and processes must be drawn nearer in time.

IM concept existence makes it possible to state the drawbacks of the contemporary management and form a project applicability. At the initiative stage a project gets a formal status. At this stage the creating of the logical schemes is performed taking to consideration the pequliarities of the existing activity of the organization. Planning stage almost coincides with physical projecting. Logical schemes, that are made at the previous stage, get their meaning in the communication channels, with the help of information resources and information processing. Projecting starts from the initiation (from logical projecting), while for projecting it is necessary to have a clear concept and to see a sphere of project applicability (Edwards, Bytheway, 1995).

Modern organizations, change the traditional organization into modern organization forms, and projects create conditions for information management projecting, in order to create a new understanding of managment, that allows to solve many problems, that can not be explained by traditional management.

Conclusions

After having performed the analysis of the bibliography connected with information management project it became possible to make the following conclusions:

1. information mangement and projecting can be described as a universal inventory of the information management in modern organization, including the possible models of business, production, com-

merce, culture and education spheres.

2. Information management project management occurs processing information management. A planned link between project and information management stimulates a successful activity of a modern organization.
3. A process of projecting management consists of different processes: integration, activity, size, time, cost-lists, quality, human resources, communication, risk and supply management.
4. IM projecting management process can be grouped into initiave, planning, executive, control and concluding processes.
5. Project management depends on the surrounding. This means that surrounding influences the fulfilment of the project. The surroundings of the project influence its parts: project participants (person or organization); organizational influences (organizational management and culture), general management skills (project management skills basis).
6. Information mangement projecting consists of three stages: starting, intermediate, concluding. According to information management it is possible to divide the projecting cycle in four circles: concept check, primary construction, secondray construction and concluding construction.
7. The projecting of informational system and the choice of it depends on organizational functions and the raised tasks. The projecting of information system depends on project stages, system projecting initiation (decreses uncertainty), the analysis of needs (the applicabilty statement), technical design (connection of the technical solutions), system construction (integrated module test), aplicability test (the needs of consumers, the statement of charateristics), system commitment (system integration into consumer's activity.

Recommendations

1. Contemporary organizations must chnage a traditional organization into advanced organization forms – projects. It will allow to create information management in order to create a new understanding of management allowing to solve many problems that cannot be explained by traditional management.
2. The integration of the systems in a contemporary organization is relative, because the relations between activities in the organization are changing and systems are created during different periods of time. That is why an information stream should be a common denominator for all. The system that coincides should promise a unified transfer and reception of information.

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Informacijos vadyba šiuolaikinėje organizacijoje: projektavimo aspektas

Santrauka

Straipsnyje analizuojama palyginti nauja šiuolaikiškai mąstančių organizacijų organizavimo forma – projektai, leidžiantys efektyviai perskirstyti organizacijos išteklius bei išnaudoti potencines galimybes. Sėkminga organizacija savo veiklą planuoja projektavimą siedama su informacijos vadyba, traktuojamą kaip projekto vadybą. Projektavimo procesai gali būti sugrupuoti į penkias grupes: inicijuojančiųjų, planavimo, vykdomųjų, kontrolės, baigiamųjų procesų. Projektai vykdomi veikiant aplinkai, todėl projektą vykdanti komanda turi suvokti šį bekraštį kontekstą, identifikuodama projekto dalyvius, organizacinius poveikius, bendrosios vadybos įgūdžius. Šiuolaikinės technologijos leidžia disponuoti milžiniška ir neišsemiama informacijos gausa, kuria panaudoti organizacijų veikloje tampa vis svarbiau. Lemiamos reikšmės turi ne tik informacijos naujumo vertė, bet ir tikslingas jos naudojimas. Dirbant kompleksiškai susietoje ir labai sparčiai kintančioje aplinkoje, beveik visuomet tenka spręsti ir veikti remiantis neišsamia informacija, dėl to kaskart *tampa problema gauti kuo konkretesnės ir išsamesnės informacijos.* Aštrėjant konkurencijai įvairiose verslo sferose veikiančios organizacijos steigia informacines tarnybas, nuo kurių darbo efektyvumo priklauso visos organizacijos veiklos efektyvumas. Kaip tik tokių tarnybų (skyrių) uždavinys yra rinkti informaciją, ją sisteminti ir apdoroti. Informacijos vadybos (IV) projektavimas traktuojamas kaip universali vadybos priemonė. Galimi jo modeliai skirti visuomenei valdyti, verslui, gamybai, komercijai, politikai, kultūrai, mokslui ir pan., net pačiai informacinei veiklai. Informacijos vadybos projektavimo koncepcija – tai vienas aktualiausių klausimų, kurį lemia šios veiklos srities naujumas, labai sparti teorinė ir metodinė kaita bei integracija į naujas problemines sritis. Sėkminga organizacija savo veiklą turėtų planuoti, siedama projektavimą ir informacijos vadybą. Projektuojant informacijos vadybą atsiranda veikla, kuri traktuojama kaip informacijos vadybos (IV) projekto vadyba (IVPV). Daugelis organizacijų turi savitas kultūras, kurios atspindi vidaus vertybių sistemą, normas, įsitikinimus, pasireiškiančius veiklos ypatumais, požiūriu į pavaldumo ryšius bei kitais veiksniais. Organizavimo kultūros dažnai tiesiogiai veikia projektus. Bendrosios vadybos įgūdžiai – projektų vadybos įgūdžiai. Informacijos vadybos projektavimas – įvairialypė itin greito tempo veikla. Projektavimą reikia pradėti nuo inicijavimo (atitinkamai nuo loginio projektavimo), o koncepciją ir projekto paskirtį projektuojant reikia tai turėti omenyje. Šiuolaikinės organizacijos turi keisti tradicinį organizavimą į pažangesnes organizavimo formas – projektus, o tai sudarys sąlygas informacijos vadybai projektuoti, siekiant įdiegti naują vadybos supratimą, leidžiantį išspręsti daugelį problemų, kurių paaiškinti tradicinė vadyba jau nebegali. Sistemų integracija šiuolaikinėje organizacijoje yra santykinė, kadangi organizacijoje keičiasi veiklų santykiai, o atskiros sistemos kuriamos skirtingu laiku. Todėl informacijos vadybos požiūriu atskirų sistemų jungiančiąja grandimi reikia sujungti informacijos srautus, užtikrinančius unifikuotą informacijos perdavimą ir priėmimą.

Visos vadybos funkcijos – planavimas, organizavimas, vadovavimas ir kontrolė – remiasi nenutrūkstamu informacijos srautu apie tai, kas vyksta organizacijoje ir už jos ribų (Stoner, Freeman, Gilbert, 2001). Verslo vadybos esmę sudaro prekių, pinigų ir informacijos srautai, jų reguliavimas, reikalingas tam, kad verslas galėtų vystytis rinkos sąlygomis (Brazaitis, Brazaitienė, 1998). Šiuolaikinė rinkos ekonomika naujas sąlygas diktuoja tiek paslaugų, tiek ir prekybos sektoriuose. Tūkstantmečio pabaigoje įsibėgėjusi technologinė pažanga paveikė ir ekonomikos raidą.

Be to, remiantis mokslininkais (Garlėja, Skvorcova, 2002), socialinį žmogaus statusą visuomenėje lemia reguliarūs informacijos srautai. Informacinis ryšys su išoriniu pasauliu sudaro prielaidas aktyviai žmogaus veiklai – tą ypač skatina socialiai reikšminga informacija. Šiuo atveju tampa svarbi gaunamos informacijos kokybė, jos kiekis bei turinys. Ir priešingai: informacijos stoka gali sukelti žmogaus vystymosi anomalijas bei psichikos sutrikimus. Jaučiamas vadinamasis „informacinis alkis", kuris tam tikromis aplinkybėmis gali būti pavojingas asmenybės vystymuisi.

Informacija – vienas svarbiausių įmonės išteklių. Per pastaruosius trisdešimt metų informacijos kiekis sparčiai augo (Zeleny, 2000), o dėl spartaus komunikacinių technologijų plėtojimosi atsirado galimybė informaciją gauti labai greitai ir iš įvairių šaltinių (Hicks, 1990). Pasak Herms (2004), informacija tampa moderniuoju kapitalu. Augustinaitis ir Macevičiūtė (1996) pažymi, jog sparti informacijos technologijų raida ir plėtra neatpažįstamai keičia individų ir kolektyvų darbą, kuria naujus informacijos vartotojų poreikius ir požiūrį, keičia organizacijos kultūrą.

Informacija-svarbiausias įmonės išteklius, galintis suteikti konkurencinio pranašumo. Tačiau šį išteklių reikia ypač gerai valdyti. Vis didėjančius duomenų srautus apdoroti padeda informacinės technologijos. Nė viena šiuolaikinė organizacija negali išsiversti be informacinių technologijų. Įmonėms reikia daug informacijos iš išorės, tačiau jos pačios taip pat turi informacijos ir nuolat ją kuria ir atnaujina. Šiuo atveju lemia ne tik informacijos naujumo vertė, bet ir tikslingas jos panaudojimas. Pasak Augustinaičio (1996), informacijos vadyba suprantama kaip universali vadybos priemonė. Galimi jos modeliai, skirti visuomenei valdyti, verslui, gamybai, komercijai, politikai, kultūrai, mokslui ir pan., net pačiai informacinei veiklai. Anot Augustinaičio (1996), informacijos vadybos aspektu bet koks socialinis organizavimas pirmiausia reiškia vienokius ar kitokius žmonių ryšius. Daiktai, organizavimo struktūros, fizinis jų lokalizavimas erdvėje ir laike, informacijos laikmenos, technologijų taikymas, kūryba, inovacijos ir pats valdymas-tai tik žmonių tarpusavio santykių išraiška. Ir šie santykiai visada turi tam tikrą informacinį turinį bei atitinkamą komunikacinę išraišką. Tad informacijos vadyba visada atskleidžia žmonių, daiktų ir laikmenų ryšius organizavimo procese. Jis apima ne tik formaliųjų pozicijų valdymą, kaip įprasta klasikinėje vadyboje, bet ir milžinišką sluoksnį po jomis slypinčių neformalių ryšių, kurių organizavimas lemia formaliosios vadybos turinį. Kaip teigia Augustinaitis (1996), informacijos vadyba neatsiejama nuo informacijos komunikacijų plėtotės ir vystoma jų pamatu.

Informacijos vadyba orientuota į pačią informaciją ir jos valdymą. Bet koks organizavimo darinys implikuoja informacijos ir technologijų santykį.

Informacijos vadybos projektavimo koncepcija – tai vienas aktualiausių klausimų, kurią lemia šios sritys: 1) naujumas; 2) labai sparti teorinė ir metodinė kaita; 3) integracija į naujas problemines sritis.

Pagrindinis šio **tyrimo tikslas** – teoriniu lygmeniu išnagrinėti šiuolaikinės organizacijos informacijos vadybos projektavimo aspektus.

Tyrimo objektas – šiuolaikinės organizacijos informacijos vadybos projektavimas.

Siekiant įgyvendinti užsibrėžtą tikslą, iškelti tokie **uždaviniai**:

1. Išnagrinėti informacijos vadybos projektavimo procesą;
2. Išanalizuoti informacijos vadybos projekto valdymo aplinką, t.y. jos sudedamąsias dalis;
3. Apibrėžti informacijos vadybos projektavimo ciklo etapus;
4. Išskirti pagrindinius informacinės sistemos projektavimo aspektus šiuolaikinėje organizacijoje.

Įgyvendinant užsibrėžtus tyrimo tikslus darbo eigoje buvo naudojami šie *tyrimo metodai*: teorinės literatūros analizė bei atskirų informacijos šaltinių lyginamoji analizė.

Atlikus mokslinės literatūros, susijusios su informacijos vadybos projektavimu šiuolaikinėje organizacijoje, analizę, galima daryti tokias išvadas: informacijos vadybą ir jos projektavimą galima apibrėžti kaip universalią informacijos vadybos priemonę šiuolaikinėje organizacijoje, įskaitant galimus modelius verslo, gamybos, komercijos, net politikos, kultūros bei mokslo ir pan. veiklai; informacijos vadybos projekto valdymas atsiranda projektuojant informacijos vadybą; suplanuota projektavimo ir informacijos vadybos jungtis nusako sėkmingą šiuolaikinės organizacijos veiklą; informacijos vadybos projektavimo valdymo procesą sudaro grupė atskirų procesų: integravimo, veiklos apimčių, laiko, kaštų, kokybės, žmogiškųjų išteklių, komunikacijos, rizikos bei aprūpinimo vadybos; IV projektavimo valdymo procesas gali būti grupuojamas ir į inicijuojančiuosius, planavimo, vykdomuosius, kontrolės bei baigiamuosius procesus; projektų vykdymas susietas su aplinka, t.y. aplinka sąlygoja projekto įgyvendinimą; vykdomojo projekto aplinką nusako jos sudedamosios dalys: projekto dalyviai (asmenys arba organizacijos), organizaciniai poveikiai (organizacijos valdymas bei kultūra), bendrosios vadybos įgūdžiai (projektų vadybos įgūdžių pagrindas); informacijos vadybos projektavimo ciklą sudaro trys fazės: pradinė, tarpinė ir baigiamoji. Informacijos vadybos požiūriu projektavimo ciklą galima skirstyti ir į keturis ratus: koncepcijos tikrinimo, pirmojo konstravimo, antrojo konstravimo bei baigiamojo konstravimo; informacijos sistemos projektavimas ir jos parinkimas priklauso nuo organizacinių funkcijų bei organizacijos keliamų tikslų; informacinės sistemos projektavimas sietinas su projektavimo etapais, t.y. sistemos projektavimo inicijavimu (neapibrėžtumo sumažinimas), poreikių analize (tinkamumo nustatymas), techniniu dizainu (technologinių sprendimų sujungimas), sistemos konstravimu (integruotas modulių testavimas), tinkamumo testu (vartotojo poreikių charakteristikų apibrėžimas), sistemos perdavimu (sistemos integravimas į vartotojo veiklą).

Raktažodžiai: *informacijos vadyba, projektavimo procesai, informacijos vadybos projektavimas, informacijos sistemų projektavimo etapai.*

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